



**Performance Management at
Washington State Department
of Transportation (WSDOT)**

Why Performance Management?

Our Challenge is...

- ...to understand what is happening on the transportation system and finding better ways to describe it
- ..to understand what really matters to the public and finding ways to measure it
- ..to demonstrate the effects of our programs and what we provide for taxpayers'/citizens' money now
- ..to define the best use and highest priorities for our limited resources
- **..to make the case for increased funding**

We need to *Tell Our Own Story* and we need to *Do It Better* - Using Performance Based Measurement, Management and Reporting Tools

How the *Gray Notebook* fits into the challenge of what WSDOT must be:

A high performance organization credible with and accountable to the Legislature, taxpayers and transportation delivery partners across the state.

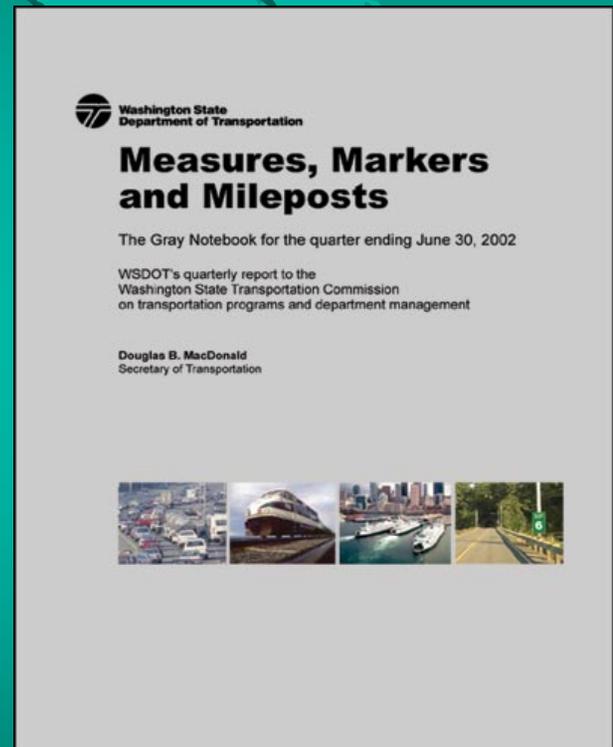
WSDOT's Strategic Approach

Communicated Two Simple Themes:

1. Accountability
2. Project Delivery

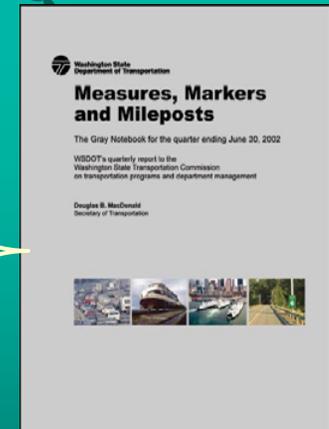
And created a quarterly performance report:

- “*Measures, Markers and Mileposts*”, also referred to as the ***Gray Notebook (GNB)***



Consistent Performance Measurement Reporting Benefits: “One Stop Shopping”— In addition to being a management and accountability tool, *Gray Notebook* Meets Multiple State and Federal Performance Reporting Requirements

- Statewide Transportation Benchmarks
- Governor’s Priorities of Government (POG) and Government Management, Accountability and Performance Program (GMAP)
- Performance Based Budgeting for the state Office of Financial Management (OFM)
- Federal Governmental Accounting Standards Board (GASB)
- Multiple Performance Audits by: state Transportation Performance Audit Board (TPAB), Joint Legislative Review Committee (JLARC) and the State Auditor
-And feeds many special reports and communication needs



WSDOT's Strategic Initiatives (objectives):

1. Plan and build (deliver) capital investment projects for our transportation systems in accordance with the instructions of the legislature.
2. Maintain and operate the transportation facilities and systems placed under the department's responsibility making cost-effective use of the appropriations provided by the legislature from citizens' taxes.
3. Optimize the operational efficiency and safety of the transportation systems and facilities committed to WSDOT's charge.
4. Report to the Transportation Commission, citizens, other officials and the legislature on achievements, shortcomings and challenges in WSDOT's performance.
5. Support the State Transportation Commission in preparing proposed budgets and plans for transportation systems and facilities.
6. Assure the capability and efficiency of WSDOT's workforce.

WSDOT's Statewide, Externally Set Objectives to Meet and Measure:

Sample of high level, statewide type of outcome measures from external requirements (i.e. legislature, mandates) met by GNB reporting:

Transportation Benchmarks:

- Safety
- Pavement and Bridge Condition
- Traffic Congestion and Driver Delay
- Administrative Efficiency

Priorities of Government/GMAP:

- Improve economic vitality of business and individuals
- Improve statewide mobility of people, goods, information and energy
- Improve safety of people and property

Consistent Performance Measurement Reporting Benefits: Positive contributions towards improved public and legislative perception and credibility

**Responses from
the media and
transportation
partners were
encouraging**

Media Examples:

As MacDonald's style takes hold at DOT, we can hope for a change in perception. Accountability builds trust and candor, removes mysteries...."
"The Gray Notebook...is as addictive in the same manner as a copy of the The World Almanac."

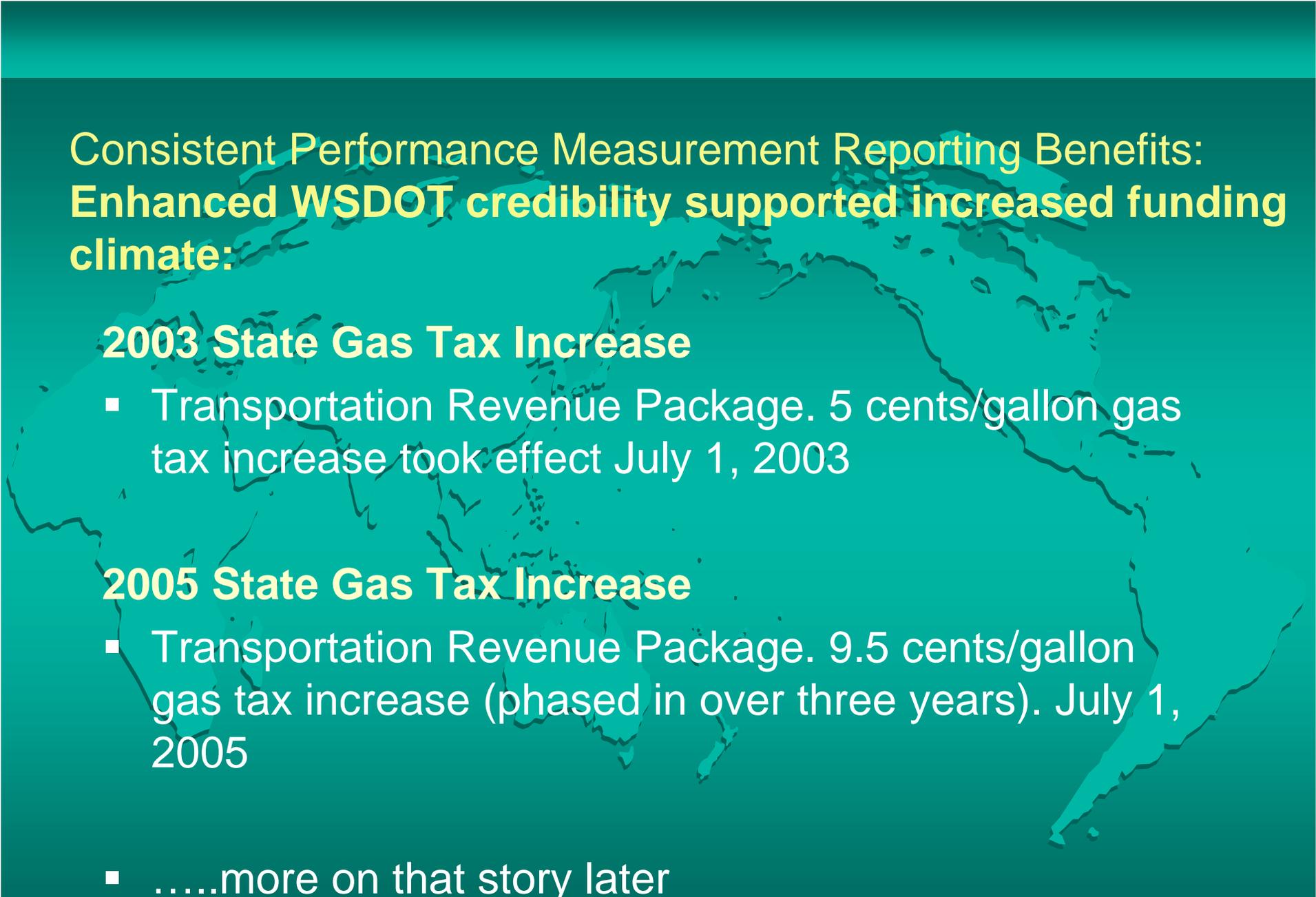
Puget Sound Business Journal
May 2002

"The Measures, Markers and Mileposts publication is education in action. If you are not checking this out, you are missing out."

Washington Highway Users Federation
May 2002

"WSDOT's Gray Notebook is second to none in the country for reporting performance measures."

Christine Johnson
FHWA Director of Field Services
November 2002



Consistent Performance Measurement Reporting Benefits:
Enhanced WSDOT credibility supported increased funding climate:

2003 State Gas Tax Increase

- Transportation Revenue Package. 5 cents/gallon gas tax increase took effect July 1, 2003

2005 State Gas Tax Increase

- Transportation Revenue Package. 9.5 cents/gallon gas tax increase (phased in over three years). July 1, 2005

-more on that story later

Determining Investment and Budget Needs: WSDOT's Performance Based Approach

- Set objectives and targets based on policy, law and available funding levels
- Collect data on system condition
- Determine deficiencies and prioritize based on data
- Design solutions/projects
Program projects
- Measure performance and report

Examples:

- **Pavement Preservation**
 - Pavement Management System (Condition Assessment and Predictive Models)
 - Lowest Life Cycle Cost Target
- **Bridge Preservation**
 - Condition Assessment and failure risk (structural deficiency rating)
 - Lowest Life Cycle Cost Target
- **Safety Projects**
 - High Accident Locations
 - Risk

Annual Performance Reporting Examples: Bridge Condition

Bridge Structural Condition Ratings

	Category	Description	2000	2001	2002	2003	2004	2005
The condition rating data shown at right is based on the structural sufficiency standards established in the FHWA "Recording and Coding Guide for the Structural Inventory and Appraisal of the Nation's Bridges." This structural rating relates to the evaluation of bridge superstructure, deck, substructure, structural adequacy and waterway adequacy.	Good	A range from no problems to some minor deterioration of structural elements	84%	85%	87%	86%	87%	89%
	Fair	All primary structural elements are sound but may have deficiencies such as minor section loss, deterioration, cracking, spalling or scour.	11%	11%	10%	11%	10%	9%
	Poor	Advanced deficiencies such as section loss, deterioration, cracking, spalling, scour or seriously affected primary structural components. Bridges rated in poor condition may be posted with truck weight restrictions.	5%	4%	3%	3%	3%	2%

Annual Performance Reporting Examples: Road Pavement Condition

Pavement Type	Lane Miles ***	Annual VMT* 2003 (billions)	Pavement Rating			**03-05 Dollars Programmed (millions)		**05-07 Dollars Programmed (millions)	
			2003	2002					
Chip Seal Pavements A chip seal is a durable surface that provides six to eight years of performance life at approximately \$12,000 per lane mile.	4,358	1.2	Good	86%	89%	\$ 21.0	9.5%	\$ 26.5	12.6%
	21.8%	3.8%	Poor	14%	11%				
Hot Mix Asphalt Pavements Hot mix asphalt pavement surface life, between rehabilitation treatments, ranges from 6 to 18 years (based on actual pavement performance) at approximately \$123 thousand per lane mile for due miles, and \$156 thousand for past due miles.	13,158	21.8	Good	91%	91%	\$ 181.4	83.1%	\$ 174.2	83.1%
	65.9%	68.8%	Poor	9%	9%				
Portland Cement Concrete (PCC) Pavements WSDOT has experienced PCC pavement life ranging from 25 to 45 years with an approximate cost of \$330 thousand per lane mile for dowel bar retrofit and \$1 million per lane mile for full replacement.	2,439	8.7	Good	93%	92%	\$ 16.3	7.4%	\$ 8.9	4.3%
	12.2%	27.4%	Poor	7%	8%				

*Vehicle Miles Traveled (VMT) is calculated for travel on mainline, spurs, couplets, alternate routes, and reversible lanes and does not include other lanes such as ramps.

**Does not include dollars for project support, e.g., project scoping and pavement management.

*** Total miles include 714 lane miles more than reported last year. This table does not include 16 lane miles of gravel that are part of the state system.

Pavement Condition Rating Summary 2000-2004

Percent of Pavement in Poor Condition

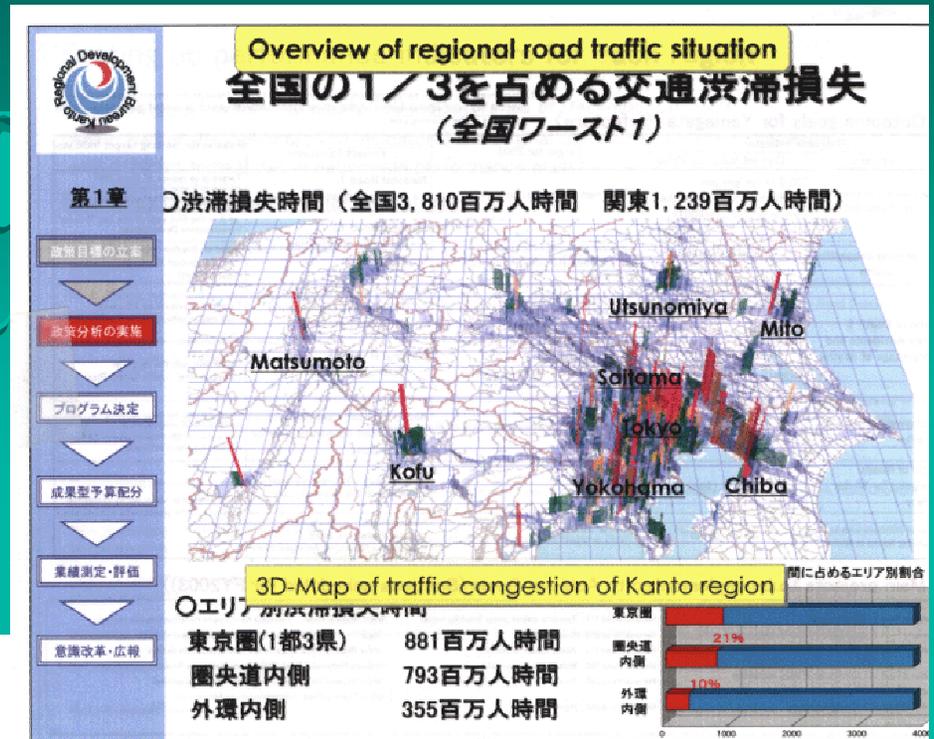
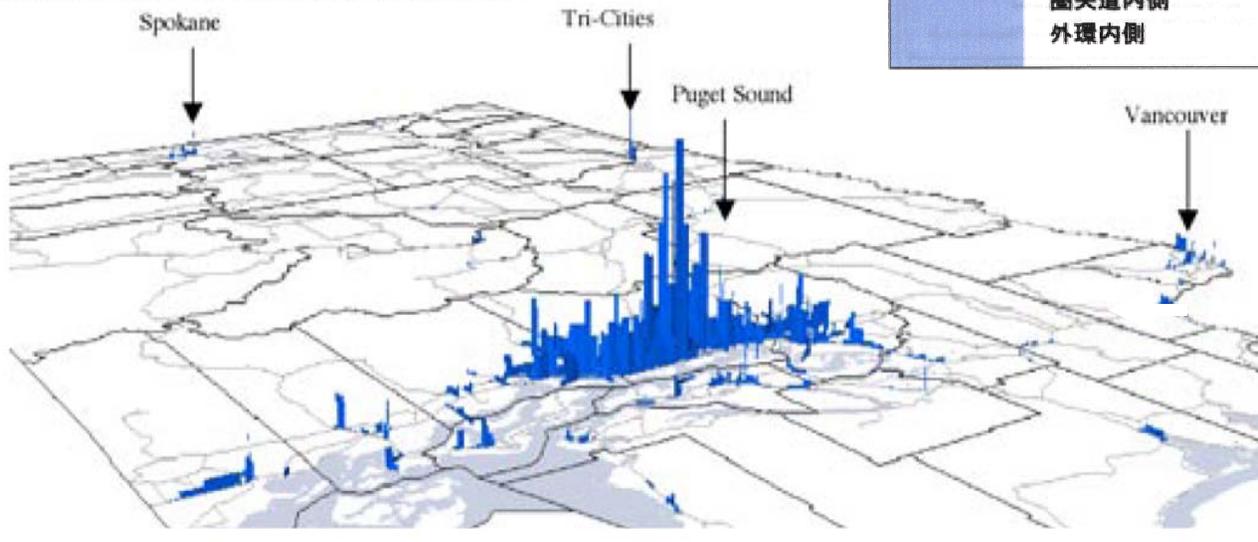
2000	2001	2002	2003	2004
6.1	8.9	9.3	10.0	10.1

Source: WSDOT Materials Lab

Learning from Others – Learning from You

Brought back from
Scan Visit to Japan, →
April 2004

Relative Delay in Washington's Urban Areas



← WSDOT-GNB-
Congestion
Report,
August 2004



Transportation Infrastructure Investment Needs

Budget Challenges in the U.S. and in Washington State

Performance Report Card for America's Infrastructure

Category	1988	1998	2001	2005
Roads	n/a	n/a	D+	D
Rail	n/a	n/a	n/a	C-
Transit	C-	C	C-	D+
Bridges	C+	C-	C	C
Aviation	B-	C-	D	D+
Navigable Waterways	n/a	n/a	D+	D-

Source: American Society of Civil Engineers (ASCE), Report Card for America's Infrastructure, 2005

U.S. Roads

Conditions

- 34% of roads are poor/mediocre
- 36% of urban roads are congested

Costs Per Year

- Pavement: "poor" condition cost motorists \$54 billion in repairs and operating cost (\$275/driver)
- Congestion Delay: 3.5 billion hours stuck in traffic; \$67.5 billion in lost productivity and wasted fuel
- Safety: crashes cost \$230 billion (\$819/resident)

U.S. Transportation Infrastructure Costs, Investments & Needs and the Overall U.S. Budget Picture

Related delay, safety, condition costs/year: \$350 billion

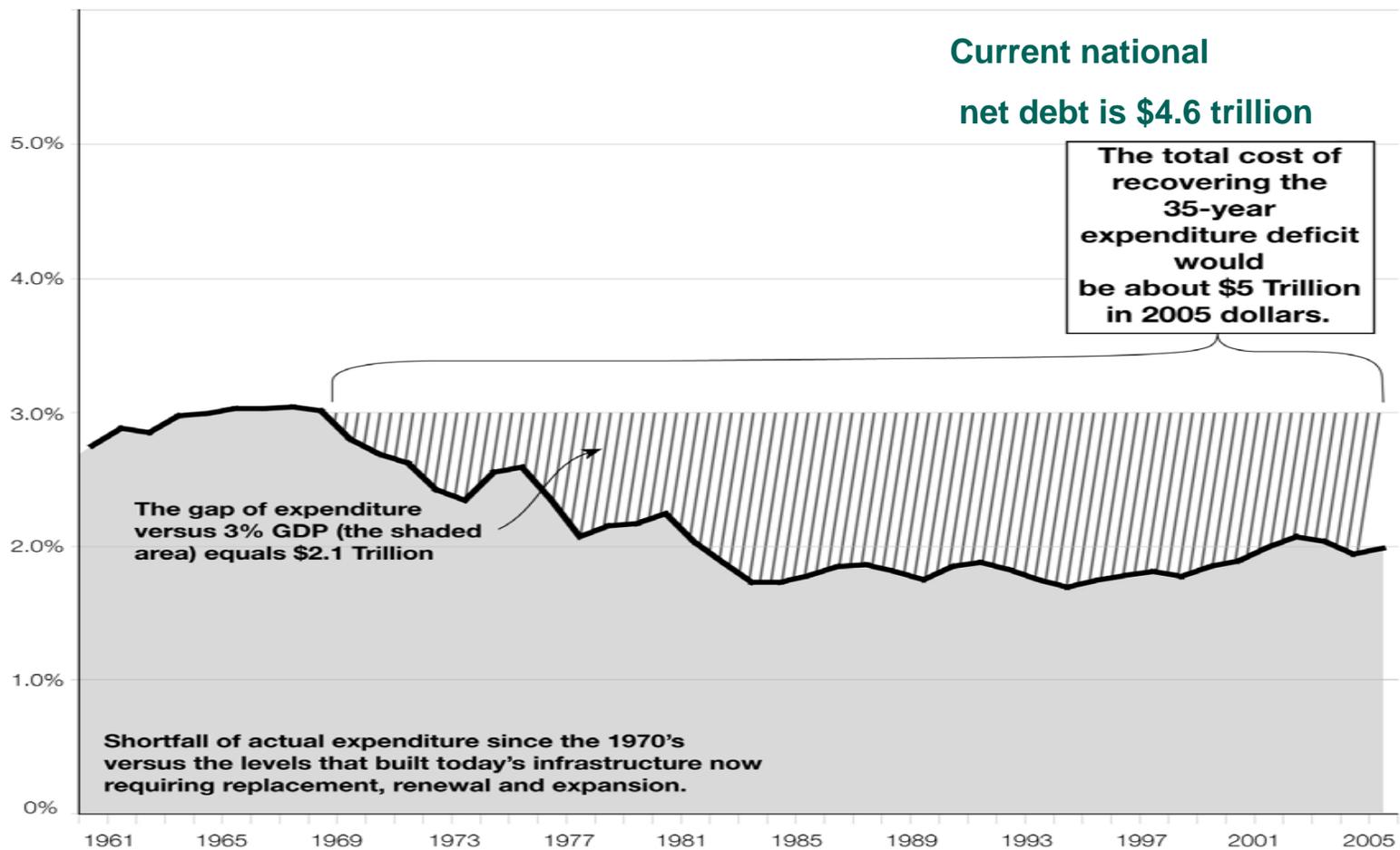
Total current transportation spending/year: \$59.4 billion

Total estimated transportation need/year: \$94 billion

The U.S. Budget Picture:

- 1980: US world largest net creditor nation (assets abroad far exceeded foreign assets in US)
- 2000: US world largest net debtor nation
- 2003: net savings rate less than 2% of income-lowest since 1934
- Net national debt = \$4.6 trillion
- Current gross national debt = \$8 trillion

The Huge Infrastructure Gap from 35 Years of Under Investment



Data from Economy.com and Bureau of Economic Analysis with appreciation to the New York Times

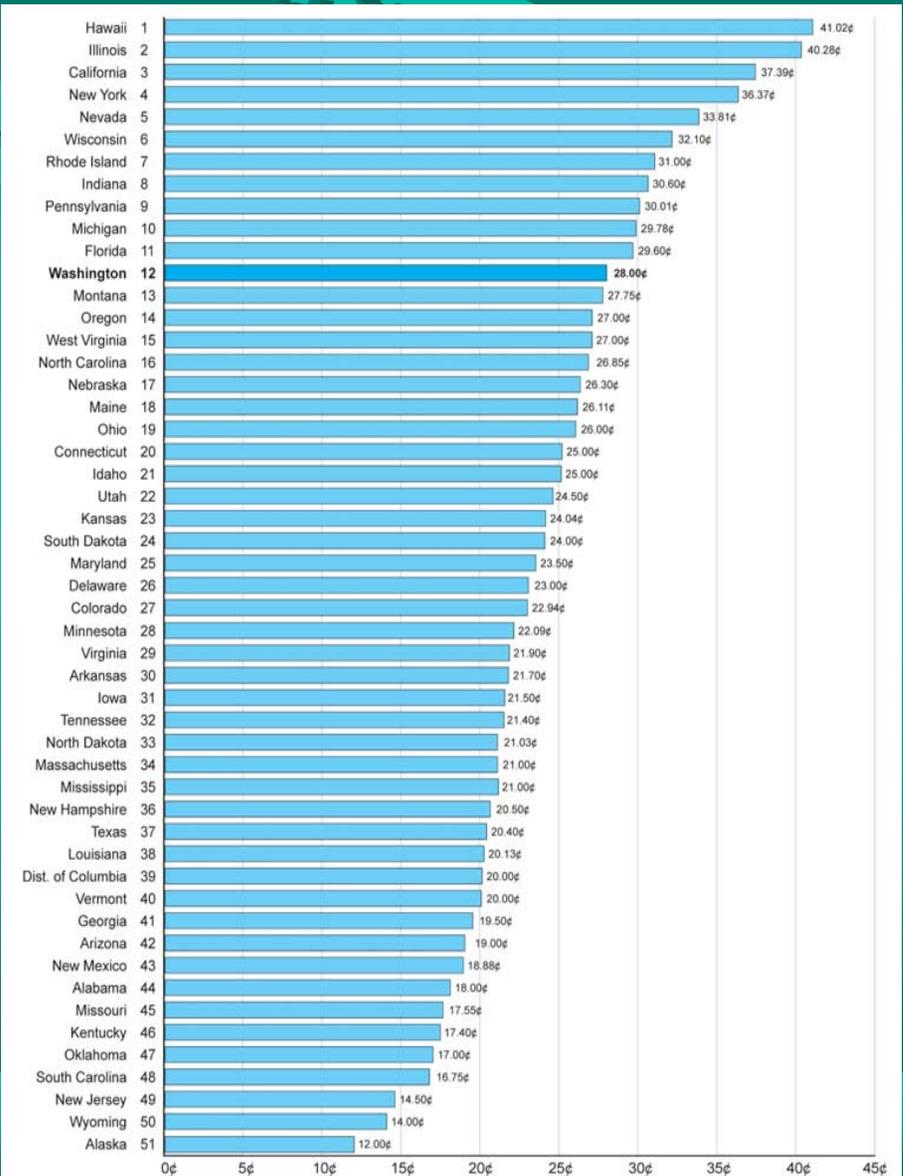
State Gas/Fuel Taxes: A state-by-state comparison

Transportation is funded through a variety of sources throughout the US.

Common sources are:

- Fuel Tax
- Vehicle License Fees
- Vehicle Weight Fees
- Weight Distance Fees
- Tolls
- Sales Tax
- Local Taxes (including property tax)
- Federal Taxes
- General Fund Monies

State-by-State Combined State and Local Gas Tax Rate Comparison, June 2005



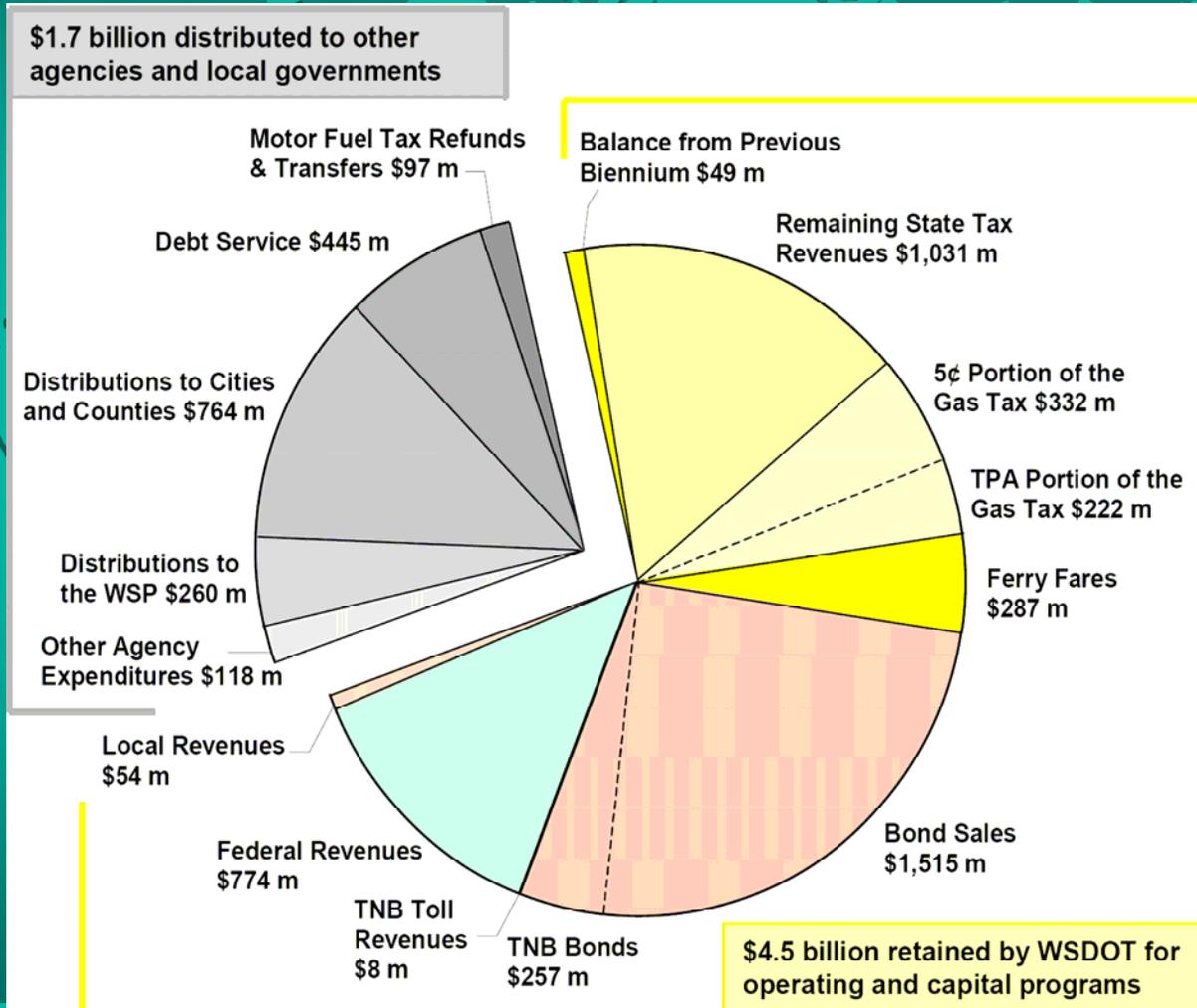
WSDOT 2005-2007 Biennium: Distribution of Funds (\$6.2B)

Distribution of Funds to other agencies and governments:

\$1.684 Billion

Funds Available for WSDOT operating (\$1.121B) and capital programs (\$3.428B):

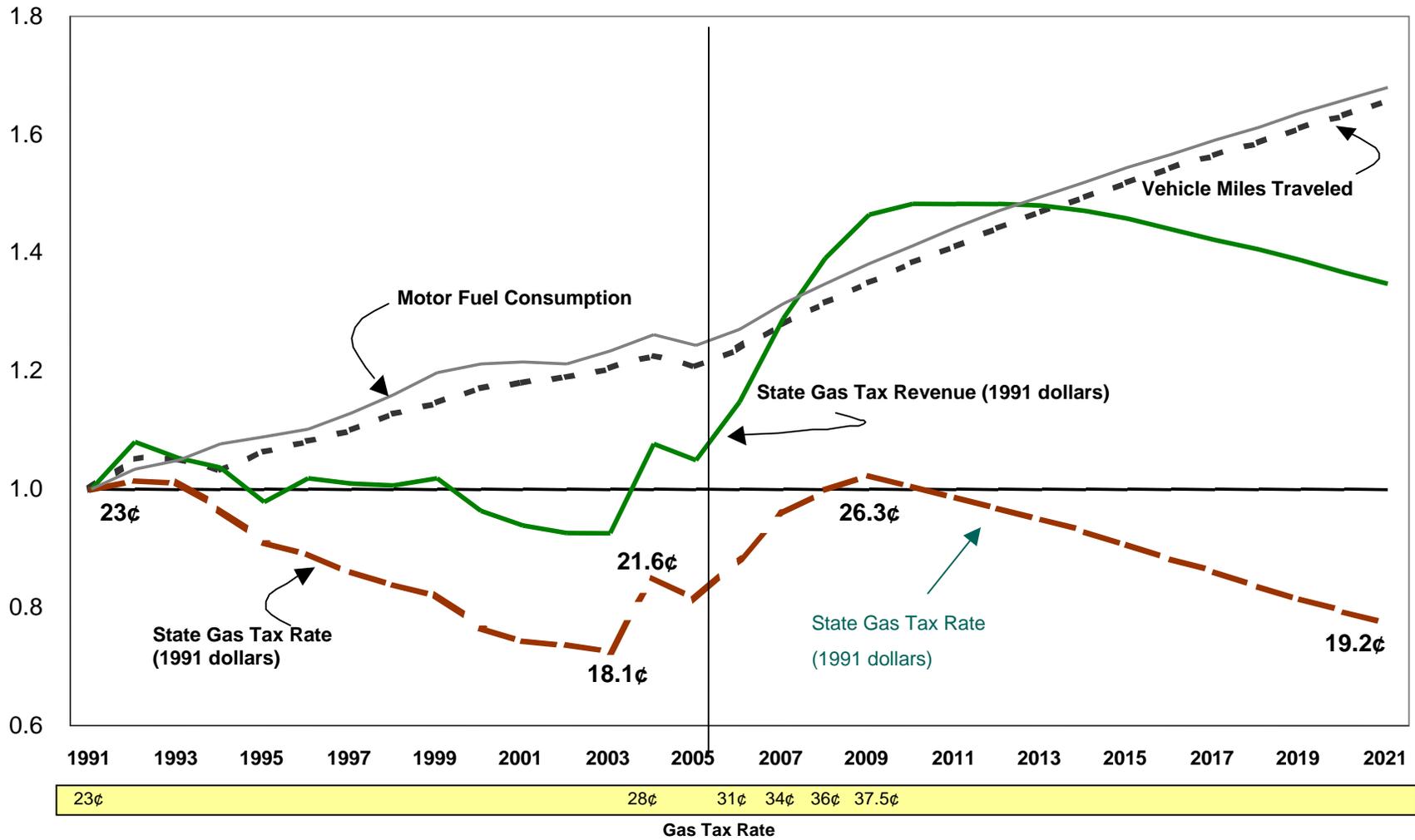
\$4.529 Billion



Cash Balance	\$ 49 M
State Revenues	1,585 M
Ferry Fares	287 M
Tolls	8 M
Total State Funds	\$ 1,929 M
Bonds	\$ 1,515 M
Bonds – Tacoma Narrows	257 M
Federal Funds	\$ 774 M
Local Funds	\$ 54 M

WSP: Washington State Patrol, TNB: Tacoma Narrows Bridge

Growth Rates Compared Vehicle Miles Traveled (VMT), Fuel Consumption, Gas Tax Revenue, & Gas Tax Rate



What funds are available for WSDOT to deliver its programs for 2005-07?

	For the 2005-2007 Biennium			Total Funds Available for WSDOT 2005-2007
	Funding that Pre-Exists the Passage of New Funding Packages in 2003 & 2005	2003 Transportation Funding Package 2005-2007	2005 Transportation Funding Package 2005-2007	
<i>millions of dollars</i>				
Operating Budget	\$1,052	\$44	\$10	\$1,106
Capital Budget	\$1,447	\$1,274	\$709	\$3,430
Total Funding	\$2,499	\$1,318	\$719	\$4,536

What is the impact of the gas tax packages in funding for WSDOT over time?

	Funding that Pre-Exists the Passage of New Funding Packages in 2003 & 2005	2003 Transportation Funding Package	2005 Transportation Funding Package
	FY 2006-2015	10-Year Plan FY 2004-2013	16-Year Plan FY 2006-2021
<i>millions of dollars</i>			
Operating Budget	\$5,492	\$253	\$447
Capital Budget	\$5,621	\$3,916	\$7,140
Total	\$11,113	\$4,169	\$7,587

Washington's Voter Initiative to Repeal Gas Tax

Initiative History:

- The initiative process is a right and procedure by which citizens can propose a law by petition and ensure its submission to the electorate.
- Washington State was among the first U.S. states to adopt the initiative and referendum process in 1912. This process, rooted in the state's populist beginnings, gives citizens the power to make and remake their laws, and to have the final say on the decisions of their Legislature.
- To get an initiative on a ballot, citizens must collect 224,880 signatures

Impacts on WSDOT

- In 1999, I-695 was approved which changed the Motor Vehicle Excise Tax (“car tabs”) to \$30 per year for motor vehicles, and repealed existing vehicle taxes.
- **Impact:** reduced WSDOT's budget by 30%

Voter Initiative to Repeal Gas Tax

**On The Washington State Election Ballot,
November 8, 2005:**

- Through a simple majority vote, Washington State citizen had a choice to eliminate the 9.5 cents gas tax that was passed by the 2005 WA Legislature.
- Voting YES on Initiative 912 would have eliminated the 2005, 9.5 cent gas-tax increase

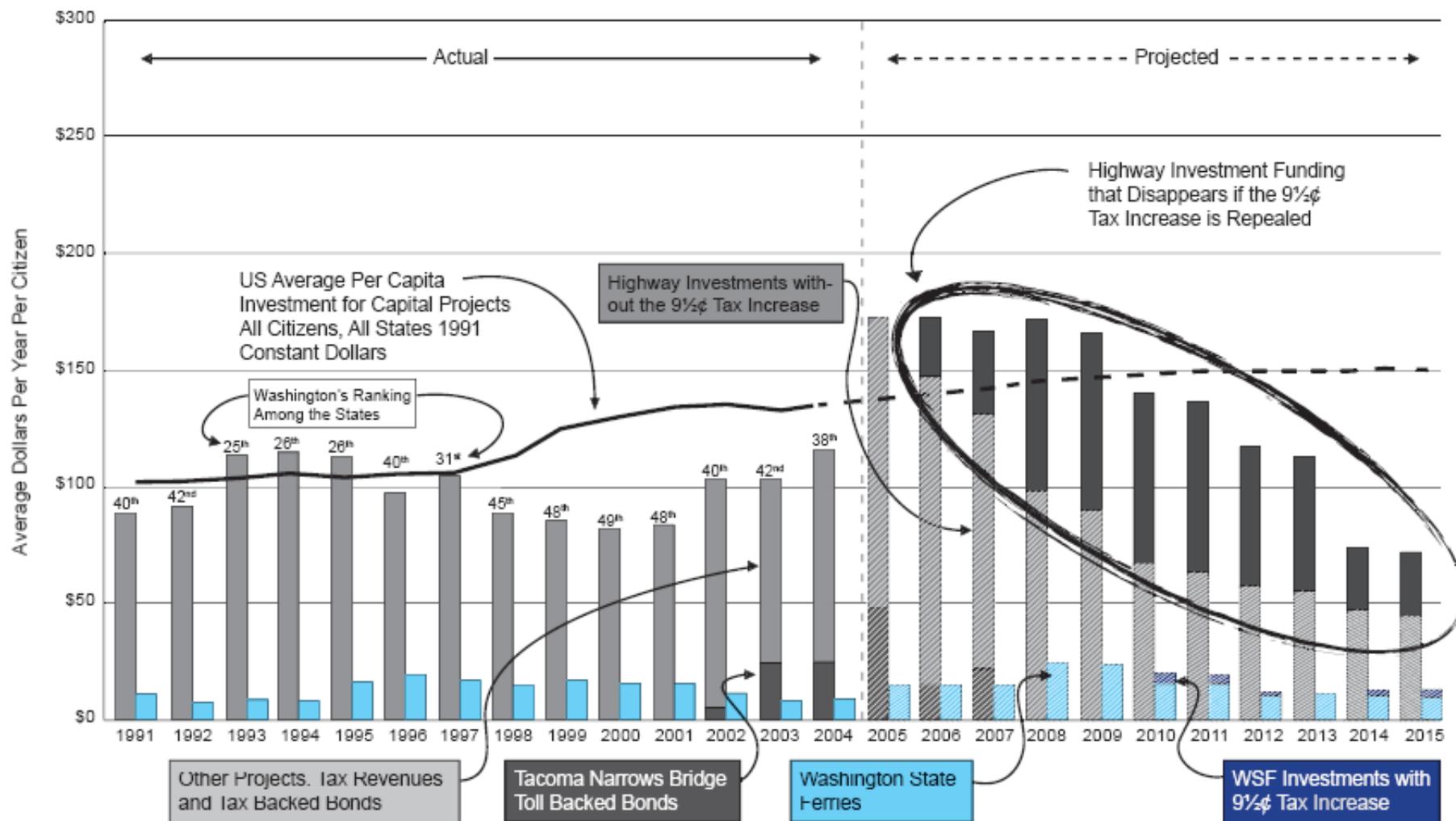
Good News: Preliminary Election Results

(as of November 10, 2005)

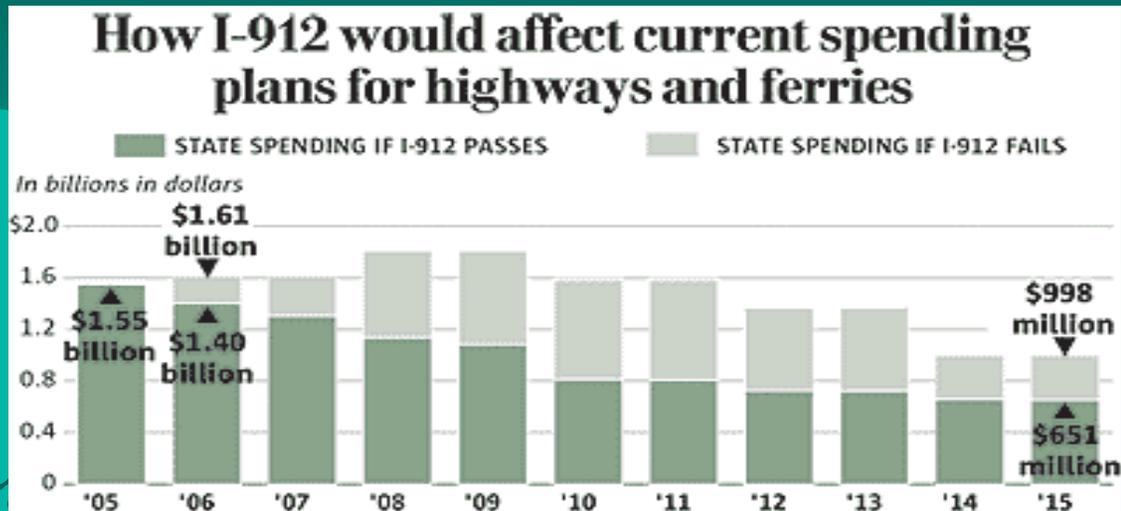
- **47% voted YES – eliminate the new gas tax**
- **53% voted NO – don't eliminate the new gas tax**

Washington State's Capital Investment in Highways

Compared to the US Average, In Constant 1991 Dollars

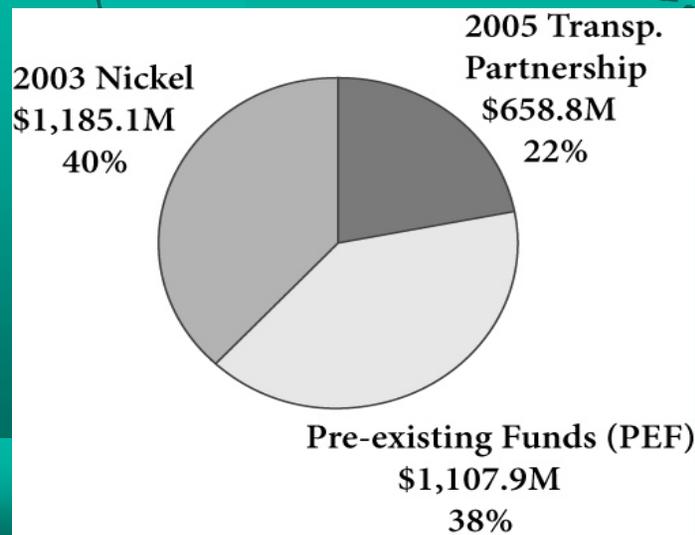


How I-912 would have impacted WSDOT



Source: Seattle Times.com

2005-07 Construction Program



9.5c gas tax 16 year Program

Roadway Safety	\$3,257.3
Preservation	\$0.5
Ferries	\$185.4
Multi-Modal Improvements	\$94.8
Environmental	\$108.2
Freight Mobility & Economics	\$541.1
Choke Points & Congestion	\$2,952.0
Total	\$7,139.4

The 2005, 9 ½ cent Gas Tax funds 274 transportation projects across the state

Seattle Area Project Examples:



Seattle Highway 520 bridge: \$500 million

The money would complete plans for a new bridge and buy some needed right of way. Finishing the project would cost an additional \$2 billion.



Seattle Interstate 405: \$990 million

Several projects would add ramps and car-pool lanes to ease congestion, including at the spot where I-405 and Highway 167 meet in Renton.



Seattle Alaskan Way Viaduct: \$2 billion

With the gas tax and other money already earmarked, the state has enough to rebuild the aging structure but not replace it with a tunnel.

Washington's Long Term Funding Outlook

"What happens after the Gas Tax?"

Long-Term Viability of Gas Tax as the Primary Source of Transportation Revenue

- Improving fuel economy compromises the growth in gas tax revenue
- Revenues do not rise with inflation
- Resistance by lawmakers to raise taxes (at least until recently in Washington State)
- Voter initiatives and gas tax repeals create unpredictable revenue scenarios

"The days of the gas tax as the primary funding source are numbered. The spread of hybrids, and alternative fuel vehicles combined with a political disinclination to raise tax rates mean that a new source of revenue is needed. In the immediate future this means greater reliance on tolls, but longer-term (10 to 15 years) there is likely to be new distance charges."

This issue is being thought about across the country

The state of Oregon has researched and is now proceeding in a demonstration project to replace fuel tax with a Vehicle Miles Tax.

Oregon's Mileage Fee Concept:

- Per mileage charge
- Mileage is collected electronically at gas stations
- Payment is made at gas stations

Ed Reagan, of Wilbur Smith

WA Considers Tolling:

- **Public Views Then...**

- Tolls were once seen as more equitable than taxes
- Few owned a vehicle in order to use roads.

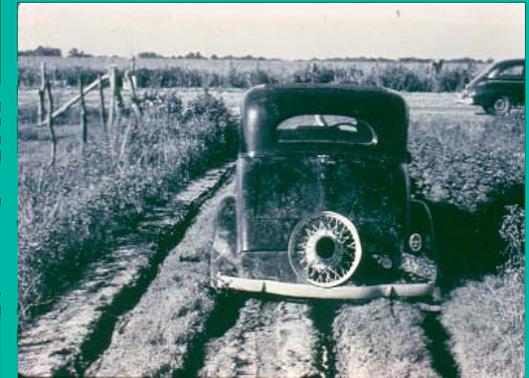
- **Public Views Now...**

- Public opinion regards roads as a public good
- Issue of fairness and equity in public opinion when tolls considered for supplemental / alternative financing and traffic management

- **Persistent controversial issues**

- Equity for low-income individuals
- Geographic distribution of benefits and burdens
- Privacy of electronic toll collection
- Double-taxation implications

- Tolls are an easy target for criticism



Sample Findings from Peer Projects

- 55%: Toll roads unfair
 - 51%: **Oppose** tolling for new construction
- 71%: **Oppose** tolling for improvement
 - 52%: **Favor** HOT Lanes
- When forced to decide,
 - 61% **Favor** tolls vs. 23% who favor gas taxes



So the Challenge Continues to be ..

.....A high performance
organization credible with and
accountable to the Legislature,
taxpayers and transportation
delivery partners across the
state.....



Domo Arigato

Thank You

Vielen Dank

Attachment: Resources

This presentation available via: <ftp://ftp.wsdot.wa.gov/public/GrayNotebook/>

Other useful links and Information:

Gray Notebook (GNB) Quarterly Performance Report and GNB LITE :

<http://www.wsdot.wa.gov/GrayBook/>

Emerging Performance Measurement Responses to Changing Political Pressures at State DOTs: A Practitioners' Perspective. (scheduled for TRB publication - Bremmer, Cotton, Hamilton)

<http://www.wsdot.wa.gov/accountability/library/PractitionersPerspective.pdf>

WSDOT's Performance Measurement Library: links to U.S. State DOT performance reports, WSDOT's and other research and best practices.

<http://www.wsdot.wa.gov/accountability/library/default.htm>

WSDOT application of operational/ITS data to measure and communicate congestion. (Bremmer, Cotton, et.al., TRB publication)

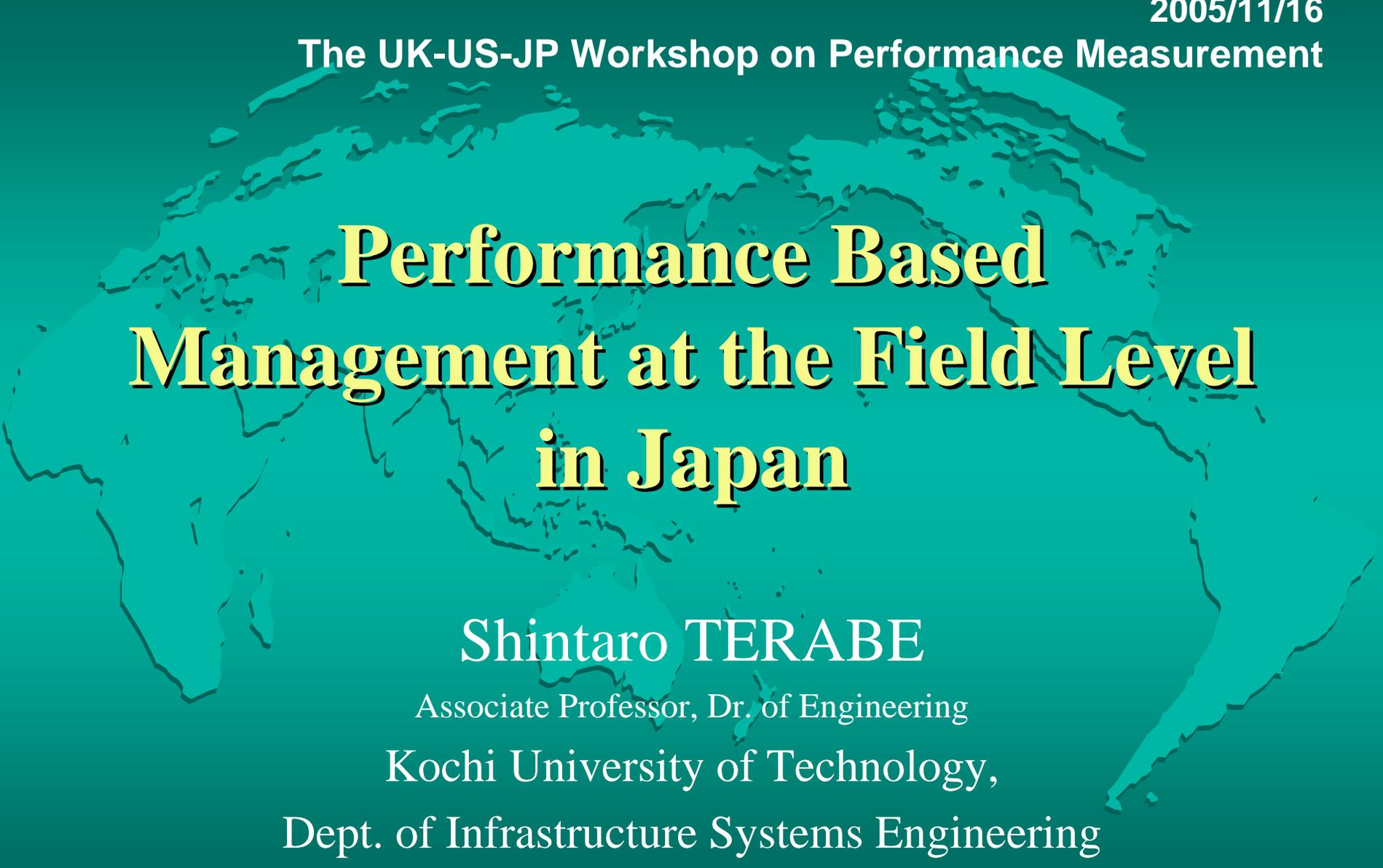
http://www.wsdot.wa.gov/accountability/peaktime/WSDOT_Measuring_congestion.pdf

WA Governor's new "Government Management, Accountability and Performance (GMAP)" initiative and legislation. <http://www.governor.wa.gov/gmap/default.htm>

Daniela Bremmer, WSDOT; Director of Strategic Assessment,
BremmeD@wsdot.wa.gov; 360-705-7953

2005/11/16

The UK-US-JP Workshop on Performance Measurement



Performance Based Management at the Field Level in Japan

Shintaro TERABE

Associate Professor, Dr. of Engineering

Kochi University of Technology,

Dept. of Infrastructure Systems Engineering



Contents

1. Performance Based Management

- Overview & Some Examples

2. Performance Based Management at the Prefecture Level

- Overview & Some Examples

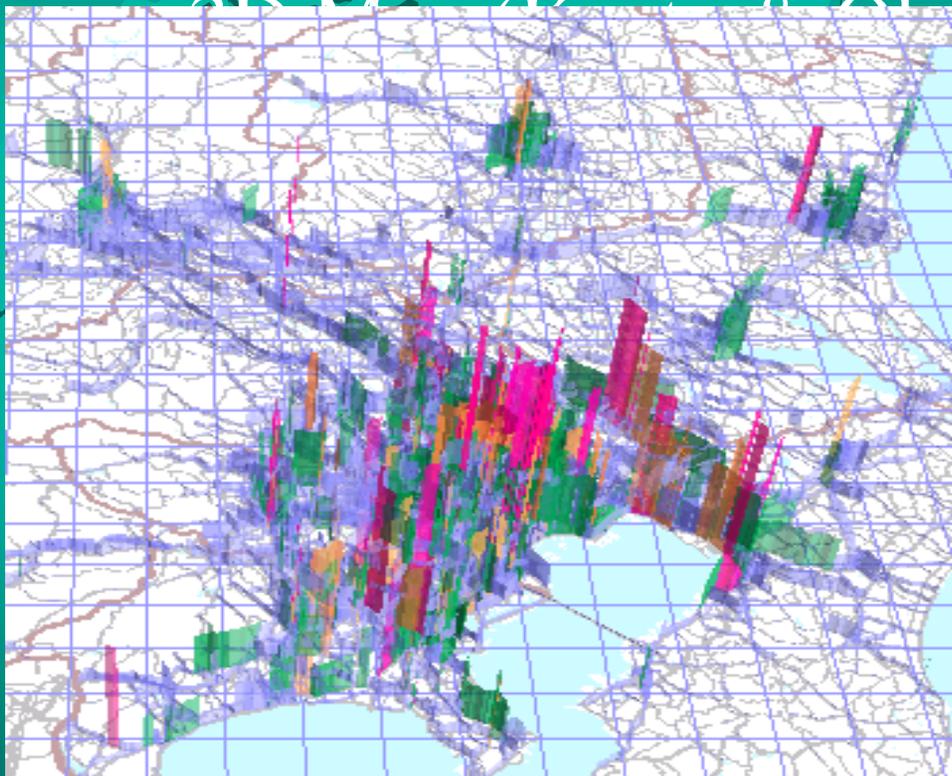
3. Characteristics of Japanese PMs

1. Performance Based Management

- Started from 2003
 - Policy Evaluation Law (2002)
 - Law for the Long-Term Plan on the Major Development of Infrastructure (2003)
- 17 Performance Measures (7 categories) in National Level
 - Reducing traffic congestion
 - Improving the environment
 - Reducing traffic accidents
 - Linking regions
 - Preparing against disasters
 - Improving regional attractiveness
 - Reforming road administration

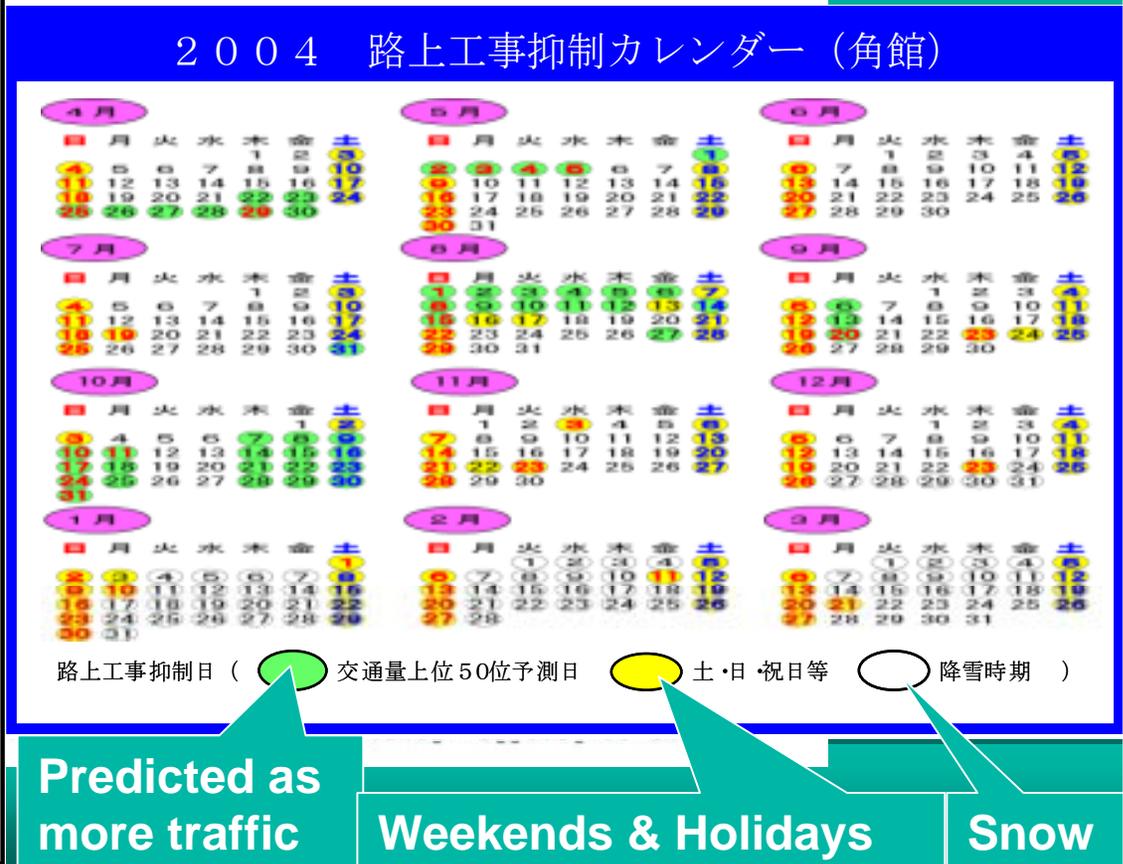
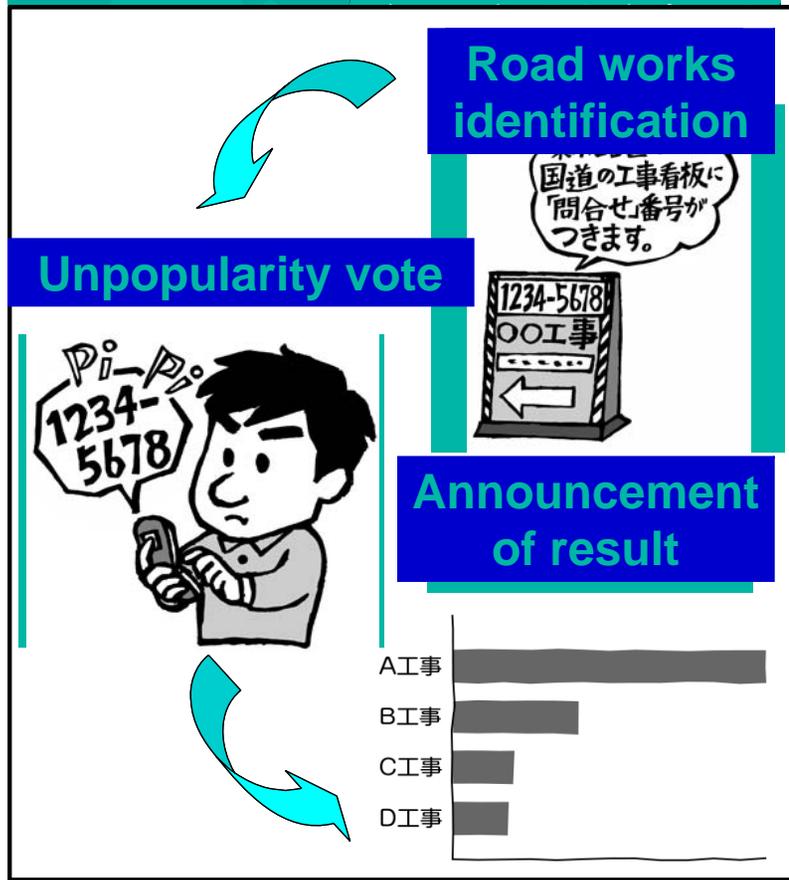
Reducing traffic congestion

ID1: Time loss due to traffic congestion



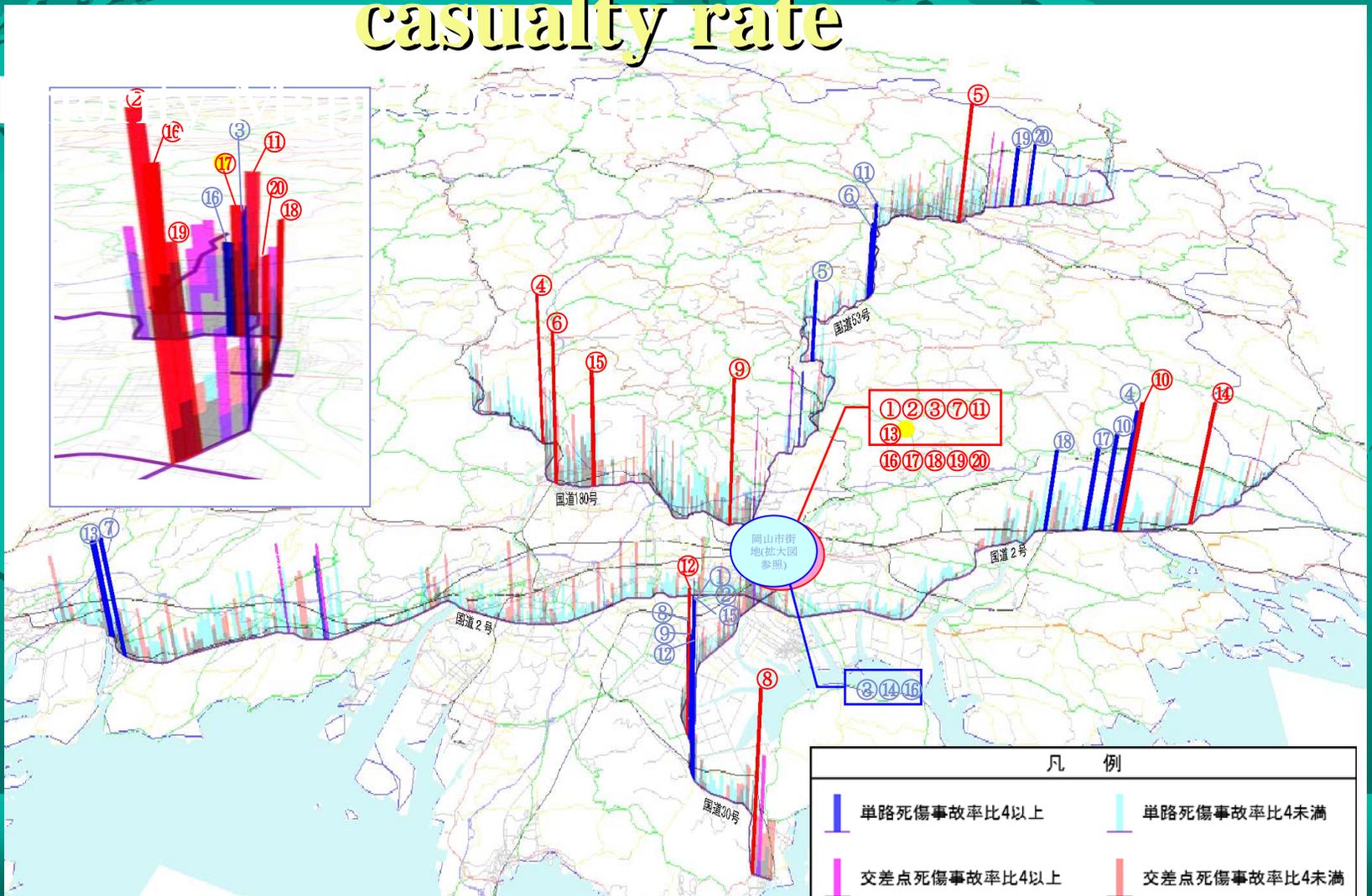
Reducing traffic congestion ID2: Hours of road work

- Unpopularity Vote (Tokyo) & Calendar



Reducing traffic accidents

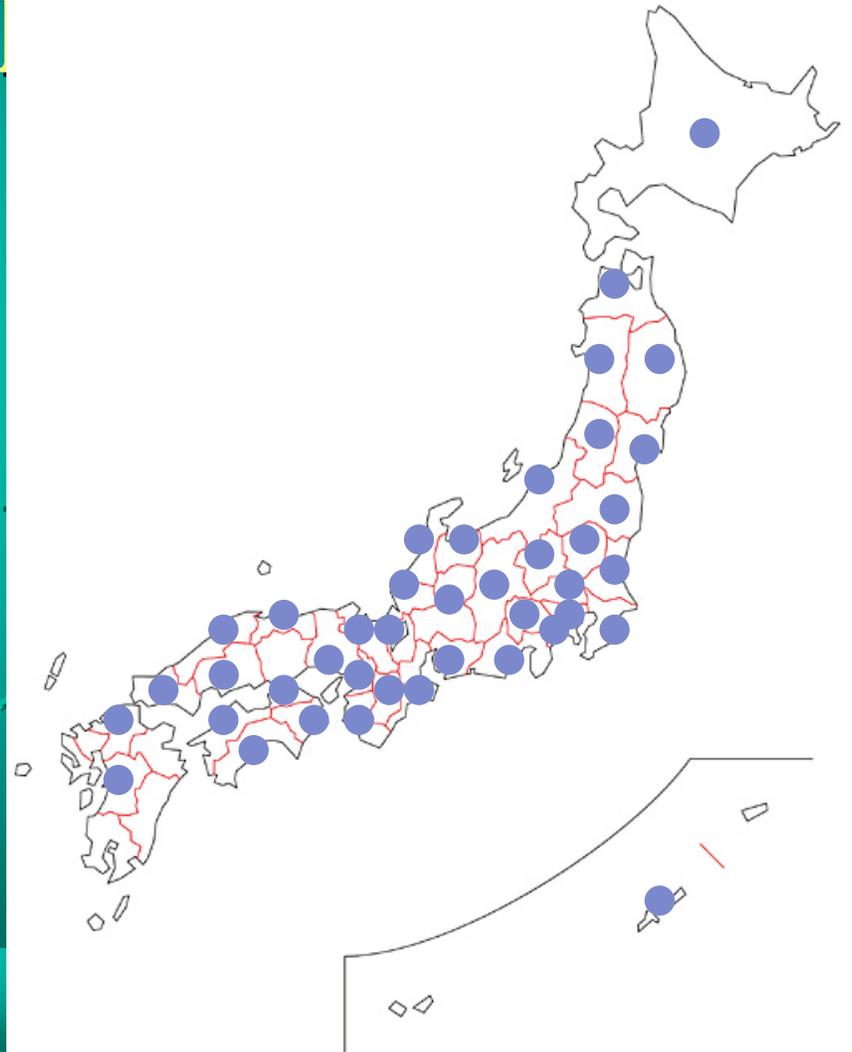
ID8: Road traffic accident casualty rate



2. Performance Based Management at the Prefecture

Level

- 47 prefectures will develop their own performance measures.
 - 41 are completed.
- PMs are depends on regional characteristics.



Aims of Management at the Prefecture Level

- Improve infrastructure system by using index and management method
- Show outcome to general public
 - People are interested in their regional road condition.
- Let public officials to consider PDCA cycle
- Help organizational communication
 - National Highway Offices
 - Prefecture Government Offices
 - Prefecture Police Department

PMs at the Prefectures



- Kochi Prefecture (4 indices)
 - Achievement rate of interregional road
 - “8 shaped interregional highway”
 - Time loss due to traffic congestion
 - Road traffic accident casualty rate

©四国の高速度道路等の整備状況（平成15年3月末現在）



ctions due to heavy rain



PMs at the Prefectures (2)



- Niigata Prefecture (11 indices)
 - Rate of snow removal on sidewalk
 - Rate of road for safe and comfort driving
 - Two lanes in mountain area
 - Sidewalk



冬でも、



すれちがい困難

供用前の状態 (供用箇所先の線の現況)



冬期の状況

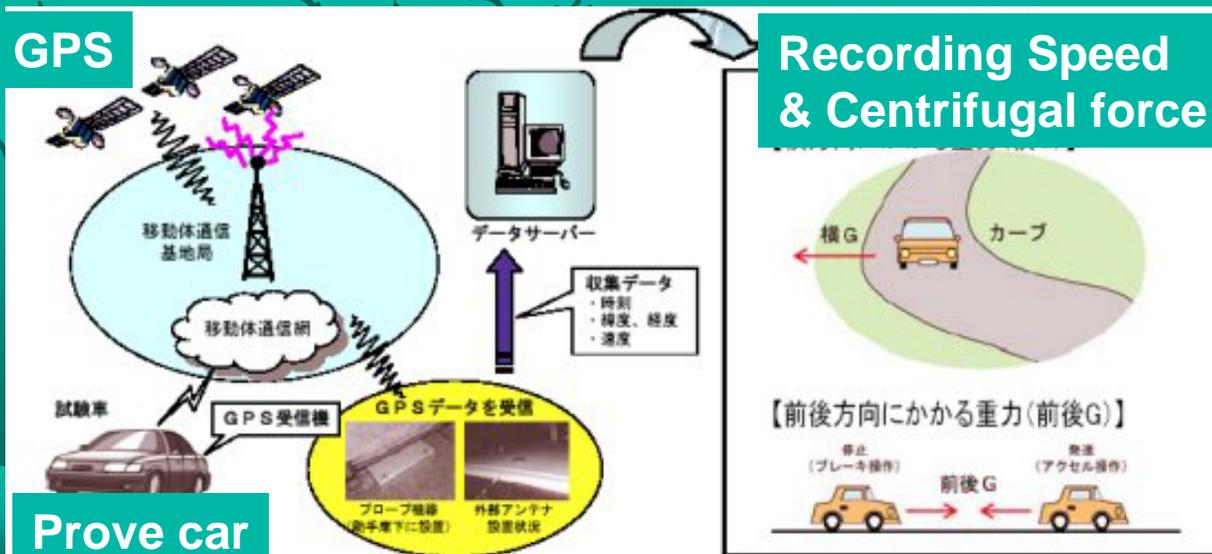


供用後

PMs at the Prefectures (3)

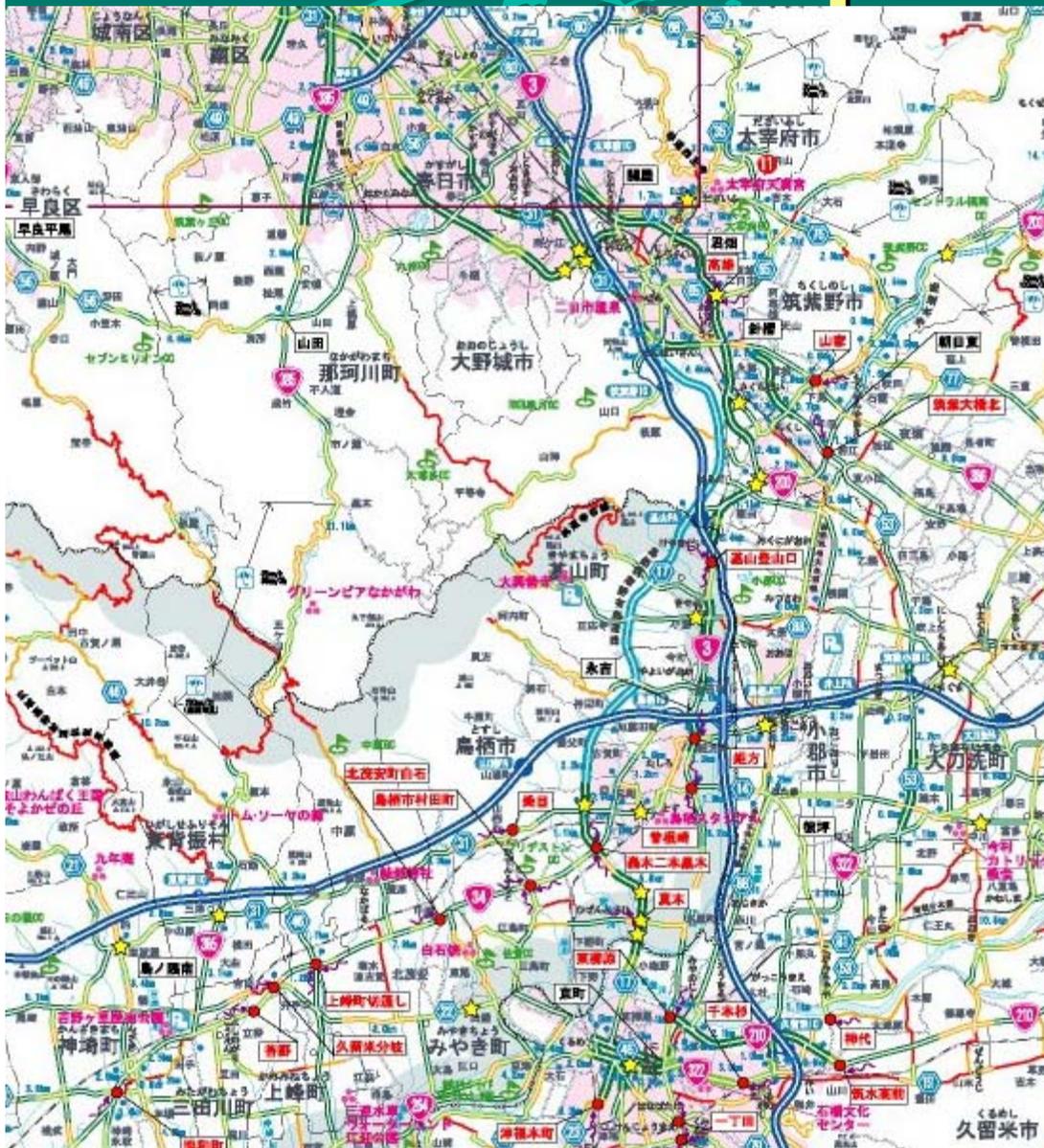


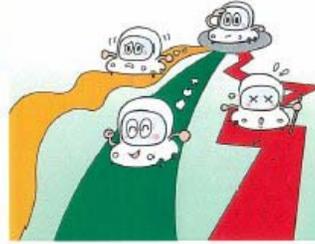
- Kyushu region (not for index)
 - Evaluation for comfort driving
 - Speed, Centrifugal force & No. of Lanes
 - Vertical & Horizontal Arrangement
- Field survey by prove car



Prove car

Route Map for Comfort



<p>自動車専用道路 (走りやすさのイメージ)</p>  <p>自動車専用道路で、スムーズな走行が可能</p>	<p>走りやすさ ランク</p> <p>M</p>	
<p>郊外部・山地部の道路 (走りやすさのイメージ)</p>  <p>① 2車線以上の道路で、5km以上にわたって、カーブ・勾配が緩やか。 ② 路肩も広く、歩行者がほとんどいないが、歩道と車道が横で分離されている。 ③ 主要な道路との平面交差が平均して1箇所/km以下。</p>	<p>走りやすさ ランク</p> <p>とても 走りやすい</p> <p>S</p>	
<p>市街地部などの道路 (走りやすさのイメージ)</p>  <p>① 2車線以上の道路で、カーブ・勾配が緩やか。 ② 歩道もしくは広い路肩がある。</p>	<p>走りやすい</p> <p>A</p>	<p>市街地部などの道路 (走りやすさのイメージ)</p>  <p>① 2車線以上の道路で、カーブ・勾配が緩やか。 ② 両側に自転車が行ける歩道があり、カーブが緩やか、路肩も広い。</p>
 <p>① 2車線以上の道路で、緩やかでないカーブ・勾配が多少ある。 ② 路肩が狭いところがある。</p>	<p>B</p>	 <p>① 2車線以上の道路で、緩やかでないカーブ・勾配が多少ある。 ② 両側もしくは片側に歩道があるが、広くない。</p>
 <p>① 2車線以上の道路で、急カーブ・急勾配が多い。 ② 路肩が狭いところがある。</p>	<p>C</p>	 <p>① 2車線以上の道路。 ② 歩道がない。</p>
 <p>① 1車線の道路で急カーブが連続。 ② 路肩が狭い。</p>	<p>D</p> <p>走りにくい</p>	 <p>① 1車線の道路。 ② 歩道がない。</p>

3. Characteristics of Japanese PMs

- Detailed & Multidirectional Measures
 - High-tech measurement
- There are some “output” based measures.
 - Should be incorporated with priority & goals
- No relationship with Organizational Evaluation and Personal Assessment
- Hidden PDCA cycle
 - Public officials have not yet recognized that they do.
- Indices of Citizens Opinion?
 - Customer Satisfaction is OK, but what else?
 - Application of Market Research Techniques
 - PMs are effective tools for communication